Prof H. H. Brewer

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ST. PAUL'S SCHOOL.—No. III.

BY MISS A. B. BERARD, WEST POINT, N. Y.

Fuller in his Church History pronounces this Eulogy upon Dean Colet: "He founded the free school of St. Paul's, and it is hard to say whether he left better laws for the government, or lands for the maintenance, thereof. A free school, indeed, to all natives or foreigners of what country soever here to have their education, (none being excluded by their nativity, which exclude not themselves by unworthiness), to the number of one hundred and fifty-three, (so many fishes as were caught in the net by the Apostles,"—St. John, xxi, 2.)

With rare wisdom and foresight he provided for "elasticity of development," as well as for stability and permanence, in this admirable institution. To this end he made no regulations that were to be binding for all time to come, but left the charge of modifying and enlarging his scheme according as the circumstances of progressive years might require, to the wisdom and judgment of the governing body under the advice of other "good lettered and learned men."

Of course, under these provisions the lapse of time has witnessed many changes in the old school. To the ancient High-Master and Sur-Master have been added five others, and the Chaplain has given place to the Usher. The stipends of the Masters have been doubled, and their "livery in cloth" is now represented by the annual present of an academic gown. The salary of the High-Master is £900 per annum, the rents of two houses in Stepney, and a residence for himself with exemption from all rates and taxes.

The scholars are divided into eight classes, and of course, in a foundation instituted by so ardent an admirer of classic lore, a boy's promotion is dependent upon his attainments in classical studies.

The hours of school time have been reduced to six, and these, happily, are so altered that the Pauline scholar is no longer required to be in attendance "Summer and Winter," at 7 A. M. The school hours now are from 9 o'clock A. M., to 2 P. M., and from 2 to 4 P. M. Holidays comprise six weeks at midsummer, four at Christmas and one week at Whitsuntide. Moreover, the rigorous prohibitions of the founder respecting *Remedyes* has been considerably modified, and now the Dean's boys rejoice in a whole holiday on Shrove Tuesday, Ash Wednesday, the Queen's Birthday, Coronation Day, Founder's Day, and the 5th of November, and have half holidays every Wednesday and Saturday during term time.

By far the most curious clause in the Statutes of St. Paul's School is that which enjoins the peculiar observances of Childermas. In many of the cathedrals throughout England, it was customary on St. Nicholas Day, (the 6th of Dec.), for the chorister boys to select from among their number a Boy Bishop who filled the office from that date until Holy Innocents or Childermas Day, a period of nearly three weeks. On the last named day, as we have seen, he entered the cathedral, preached a sermon and received the offerings of his companions and others. The boy who represented this character is said to have had the right of appointing to any prebends which might fall vacant during his term of holding the office, and should he die before it had expired he received all the funeral honors appropriate to a veritable Bishop, and had a monument erected to his memory. In a tomb in Salisbury Cathedral may be seen the sculptured effigy of a Boy Bishop, represented in Episcopal vestments with mitre and staff, such as he actually wore during this singular episode in his brief life. Dean Colet's injunction with regard to Childermas is the more remarkable because of his apparent aversion to any undue latitude in the direction of amusements evinced by his prohibition of *Remedyes*, St. Bartholomew Fairs, and the like. But whatever may have been his motive, whether through a fondness for what a poet calls "the fair humanities of the old religion," or as one of his biographers suggests, in order to rouse a spirit in the boys and thus incite them to qualify themselves by diligence for the actual mitre, the good Dean certainly did enjoin upon his boys the observance of a festival which according to old writers, was attended, during the three weeks of its continuance, with irreverent boy-

ish pranks and frolics not very far removed from buffoonery.

The first High-Master of St. Paul's School was Colet's early friend, and one of the most famous scholars of his own or of any age, William Lily. A little Manual of the Rudiments of Grammar, known as "Paul's Accidence," had been drawn up by Dean Colet immediately upon the establishment of his school. To this additions were subsequently made by Erasmus, and, especially, by Lily. This little book under the name of Lily's Latin Grammar, was, a few years later, made by order of Henry VIII., the standard for the English Grammar Schools. The Greek Grammar also in most general use throughout the Kingdom was made by Camden, a scholar of St. Paul's, so that to the good Dean and to his foundation, succeeding generations have been indebted for two of the most important text books on which the elements of a classical education depend.

The original school building which Erasmus calls a "magnificent structure," and of which he has left an interesting description, was destroyed in the Great Fire of 1666. Within five years from that calamity a new edifice was erected by the Mercer's Company, having two additional Masters' Houses and a spacious cloister underneath the school for the use of the boys as a play ground. The old building had stood on a level with the street.

In English history we often meet with notices of the welcome given by "Paule's Scholars" to royal personages upon their entrance into London. On such occasions a balcony was erected in front of the school from which addresses were presented by the head boys. The custom is of great antiquity, although its origin is not known. It has fallen out of use, however, within the last thirty years, the present sovereign preferring to receive the addresses of the school in a less public manner.

As may well be supposed, the revenues from the Coletine estates held in trust by the Mercer's Company for St. Paul's School, have by the accretions of 360 years become greatly augmented. That this body have ably administered these funds we have the testimony of the Royal Commissioners, who aver in their report: "The enormous increase in value is in itself evidence of a pure and diligent administration; nor do we conceive that better care would have been taken by any other body to which Dean Colet could have entrusted it."

The Commission strenuously recommends the adoption of some plan by which, in conformity with the spirit of the founder's directions, these large revenues may be applied to extending the benefit of the school. In the lapse of centuries, "The Estende of Paule's Church Yard," in the center of the world's most busy mart, has become a place but ill adapted to carry on the business of teaching. It is scarce possible, owing to the noise of traffic outside, for the Masters to make themselves heard by their respective classes without seriously disturbing and confusing each other. The Bishop of Flandaff, one of the Advisers of the Court of Assistants, and himself a Paul's scholar, remarks: "The site is so objectionable that if the same reasons had existed three centuries ago, I cannot persuade myself that Dean Colet would have selected it, nor do I think that the spirit of his will or his intention in founding the school would be violated by a mere transfer of the site." As it would, however, manifestly contravene the Founder's will to remove the school beyond the limits of the Metropolis, the proposition, which finds greater favor, and which will, in all probability, be finally adopted, is to purchase a larger area of ground in a less-frequented, and therefore a more eligible part of London, within a mile or two of the present locality, and easily reached by the numerous facilities of communication which now exist: to erect there spacious and commodious buildings, and secure withal, as extended a play ground as possible. The increase of the number of boys to be educated on the Foundation from 153 to a number note xceeding 500 is also strongly recommended, 200 of these to be received as scholars proper, and the remainder as Non-Foundationers.

This article is already too extended. We dare not swell it by a list of distinguished Paulines. Instead, a single sentence must suffice. At the "Apposition" Banquet of 1846, Lord John Russell happily remarked: "But for St. Paul's School, Milton's harp would have been mute and inglorious, and Marlborough's sword might have rusted in the scabbard."

A SUMMER VACATION IN EUROPE.

BY JOHN H. PECK, NEW BRITAIN.

Having had occasion to answer many inquiries, from time to time, respecting his recent visit to Europe, inquiries of a practical character, from teachers especially, indicative of a growing consciousness of the practicability of such a journey, even with our moderate incomes, the writer of this article would further allege as a reason for writing it, the provoking solicitations of the Managing Editors of the JOURNAL. We do not doubt many another re-

luctant pen has been set at work by their faithful provocations, for which they have never duly received the thanks of the brotherhood. They deserve them.

The number of American teachers who crossed the Atlantic last year was very great; some went for the vacation only, others for a longer sojourn; they were to be met everywhere, both sexes, alone or in small parties, along the ordinary routes of travel. None could exceed them in enthusiasm and thorough enjoyment. And, surely, when the year's work is done and the long vacation comes, who more than the teacher can experience a feeling of entire relief, or give himself with utter *abandon* to the recreation of body and mind in one way or another? If the recreation can be combined with such opportunities for self-cultivation and enlargement as travel affords, so much the better. The teacher needs travel, and has a rare chance to make his observations useful to others.

The two plain questions which are commonly asked are, "Where did you go?" and "What did it cost you?" In answer to the first query, we should state that we started with a well-prepared plan for the whole journey, which was only followed, however, in the main; it was pleasanter to vary the route according to inclination or circumstances. It was easier to change our plans from day to day, since we were but two to be suited. A large excursion party may have certain pleasant features, but few would be willing to endure for a long time the restraint and vexation of "going with the crowd;" excursion tickets, moreover, so far as we can learn, have not the merit of cheapness. One who visits Europe for the first time, and that possibly the only one, naturally aims to take a general view, so far as his time will allow, rather than to "do" thoroughly any particular country or cities, and such was our aim. We were absent just thirteen weeks to a day. Of this time twenty days were spent upon the Atlantic, five days in the detour from Liverpool to London *via* Chester, Shrewsbury, Warwick and its environs, Kenilworth and Stratford on Avon, and Oxford; ten days in London; ten days on the journey to Geneva, visiting Antwerp, Brussels, Cologne, taking two days upon the Rhine, the same at Baden Baden, stopping many hours at Strasburg, Berne and Lausanne, and finally spending a whole day upon Lake Geneva; fourteen days among the majestic mountains and emerald lakes of Switzerland, and at last by Lake Maggiore to Milan; seventeen days in Italy, giving one day to Lake Como, a week to Rome, quite satisfactory visits to Florence and Venice, and pleasant rambles in Bologna, Pisa, and other cities on the route; the remaining fifteen days were given to Munich, Paris, and the journey back to Liverpool. So extended a journey, involving rapid movements through a country filled with objects and places of exciting interest, in order to reach points of still greater importance, leaves in its train many regrets, is, moreover, comparatively quite expensive, yet on the whole is very satisfactory. Such a trip has included a great part of the representative features of European scenery and social life, the greater points of historic interest, and its most valuable treasures of art. While there has been no time for thorough study of these, a thousand precious impressions have been so ineffaceably stamped upon our memories that the pleasure they give will be life-long.

The second question, as to the cost, is apt to be put in a hesitating manner, as if it were a delicate point. We have no hesitation, surely, in answering it. The whole expense of the trip from New York to the same place again, excepting no purchases but those of a permanent character as clothing, pictures and the like, amounted to a trifle less than five hundred and fifty dollars. There is no doubt this amount could be materially lessened in repeating the same journey, without diminishing the comforts or enjoyment of it in the least. The daily expenses of the traveler during his stay in any European city need not exceed three dollars to insure him good living and enough to pay all ordinary fees connected with sight-seeing; the careful economist, a man, at least, will often live on half that amount. One point more and we have done. No person need hesitate to take such a trip alone. Americans are omnipresent; one can hardly avoid meeting a score of them daily, and he would be singularly unfortunate who could not find congenial companions among his own countrymen, if he so desired. Many of the most pleasant and profitable hours which we remember, were made so through these incidental and timely acquaintances. An Oxford undergraduate, encountered on "Addison's Walk," was a cordial and excellent companion for hours through the quadrangles of the colleges; a Tyrolean teacher, whom we met in the throng at the cathedral of St. Mark, was afterwards a friendly guide and an able interpreter in Venice; aad these are but instances of many similar friendly encounters. But, after all, and the remark wells up from our own pleasant experience, that person is more than doubly prepared for the enjoyments of travel who has a friend of kindred tastes and purposes to

journey with him. Next to an ample and reliable letter of credit, nothing can be more desirable than a good *compagnon du voyage.*

PARTING HYMN.

BY MISS ALICE L. HOUGH, WALLINGFORD.

Sung at the Graduation of the First Class of 1873, *Connecticut State Normal School.*

Class.—Just before us lies our life work.
All its scenes are new, untried;
Who shall lead us through that future?
Even Christ, our promised guide.
All our strength is naught but weakness,
All our help must come from Him;
Clothe us, Father, clothe with meekness,
Grant our faith may not grow dim.

School.—Dearly loved,
We may not keep you.
White the field,
True laborers few.
Though we're grieving,
Hope is weaving
Dreams of golden
Sheaves for you.

Class.—Schoolmates dear, we thank you kindly,
For the words of cheer you give.
Loving thoughts will centre round you
Now, and ever, while we live.
May our farewells cause no sadness,
For we choose the work we love.
May your lives be bright with gladness,
May we meet—one band—above.

School.—May success
Attend you ever,
Till we meet
Beyond the river,
Teaching ever,
Ceasing never,
Till the Lord
Shall say well done.

All.—Thanks we give thee, O our Father,
For the blessings of this day,
Be thou near in all our future;
Guide and lead us all the way.

HISTORY OF PLAINFIELD ACADEMY. NO. VI.

BY REV. L. BURLEIGH.

We have now arrived at a period in the history of the academy when the multiplication of similar institutions, and the general improvement in public schools, especially in the cities and larger villages of the country, begins seriously to interfere with its prosperity. The zeal for improvement which characterized the first twenty-five years of its progress waned rather than increased. When other institutions responded liberally for better accommodations for the boarding of pupils, Plainfield continued in the old ruts. Pupils were boarded in private families, but the number of such families was constantly diminishing. Many of those in comfortable circumstances were unwilling to confront the labor and confinement necessary in furnishing regular board for students, and refused longer to open their houses to them. From 1782 to 1800 it was easier to find board for two hundred pupils, than it has been to accommodate fifty pupils from abroad at any time since 1830. Many families that once boarded from four to ten pupils, became so decimated by death and the decrepitude of age that their homes were practically closed against pupils; this considerably diminished the facilities for board. While accommodations for pupils were diminishing in Plainfield in scores of places about the country every facility was afforded for improved accommodations, often in large boarding-houses.

From this cause, and others that might be named, this honored institution was hardly able to keep her early ascendency. Younger institutions, with richer endowments and more ample architectural conveniences, outstrip her in the race, but she yet keeps an exalted place among the educational institutions of our favored land. The past is secure. She has done a great work, and may yet have a distinguished future. In the spring of 1837, Mr. John Jones was chosen principal and held the position for one year. The school was not large, but some of his pupils became graduates of college, among whom was Rev. Nathan W. Williams. From 1838 to 1845, Messrs. David Pratt, Oscar Fisher, Nathaniel Eddy and J. S. Wallis held the office of principal. The continuance of each was short, and but few records have been preserved. By some strange oversight there is no mention of either of these gentlemen on the trustees' record book, so far as can be discovered at the present time.

The memory of pupils and of the trustees are the chief repositories of facts concerning them, and it will be found a difficult task to fix exactly the date of the commencement or close of their labors, with accuracy. Some of these gentlemen are still living, and it is to be hoped will furnish the data from which to determine, at least, their own time of service, though as yet they have made no sign.

In August, 1846, William Addison Benedict became principal of the academy; its operations having been suspended for a year, since the resignation of J. S. Wallis, the last previous incumbent. Valuable philosophical apparatus was soon after purchased, at the cost of about $200. Mr. Benedict de-

voted himself resolutely to the duties of his office, and the school steadily rose in public favor and patronage. In 1848, having been but two years in the school, he was appointed a missionary of the A. B. C. F. M., and resigning his position, entered upon the study of Tamil and such other studies as were deemed important in the preparation for his proposed labors in India. He was ordained June 27th, 1849, and during the July following, the honorary degree of Master of Arts was conferred on him by Amherst College.

Mr. Nathaniel Hudson succeeded Mr. Benedict, in 1848, but did not remain long in the place of principal. Mr. Benedict's health being inadequate to the toils and exposure of missionary life under the tropic skies of India, upon application he was released from his appointment, and resumed the office of Principal of Plainfield Academy. The number of pupils at once increased, and the school was in a prosperous condition. The catalogue of 1850 contains the names of 102 pupils, several of whom became collegiates of distinction, among them Rev. James K. Hazen, widely known as an eloquent preacher; Prof. John Hewit, George Tanner, Nathan G. Williams, David Francis, and numerous others whose names are not recalled.

Mr. Benedict had a happy talent and eminent success in imparting instruction and in maintaining good discipline, and, as a just consequence, the academy attained something of its former renown, and was limited in numbers only by the restricted capacity for the accommodation of boarders. At his suggestion, chemical and philosophical apparatus had been provided and important changes and repairs made upon the school building, at an aggregate cost of several hundred dollars, which was met by voluntary contributions, and in large proportion from the trustees themselves, who from the founding of the school have been its most liberal patrons and benefactors. Mr. Benedict had, as his assistants, in the various departments, Mr. Henry D. Burlingame, Mr. John M. Francis, and Miss Mary F. Cogswell.

In the Spring of 1852 Mr. Benedict resigned his charge of the school, and for a year taught a few pupils in his own family. This was too narrow a field to give scope to his talents as an educator, and in the fall of 1853 he accepted an invitation to the Principalship of the Union School of Lyons, N. Y., where he taught with eminent success for three years, sending large delegations forward to strive for collegiate honors. His health had become re-established, and he left teaching for the active duties of the ministry; soon accepting an invitation to the then vacant pulpit of the Congregational church in Plainfield. In this position he continued until the outbreak of the rebellion and the commencement of the terrible conflict which followed, when he resigned his pulpit and accepted an appointment as Missionary Agent of the American Tract Society, for work in the Army of the Potomac and among the freedmen. While acting in this capacity he, in connection with N. P. Kemp, Esq., and Rev. L. B. Rockwood of the Boston branch of the Tract Society, established the school among the freedmen on Arlington Heights, Virginia. This school attracted the attention of senators and representatives in Congress, who were frequent visitors, as were also multitudes of the friends of the freedmen from all the Northern States; thus the institution invited and fostered that wide-spread and increasing interest, which culminated in such earnest efforts for the education of the colored race of our land.

Mr. Benedict acted as an agent of the Tract Society for a year, when he was appointed by Gov. Buckingham, Military Agent of the State of Connecticut, at Washington, with the rank of Lieut. Colonel, in which duty he remained until February, 1866, when he returned to the work of the ministry in which he is still (1872) engaged.

I can not refrain from adding a brief notice of the beneficent work of Mr. Benedict in behalf of the soldiers, which I extract from the "Military and Civil History of Connecticut during the War," page 838:

"Early in the war, the citizens of Connecticut in Washington organized a Soldiers' Aid Society, a sort of central reservoir to receive and disburse supplies to the soldiers from the State, in the vicinity. Admiral A. H. Foote was its first president, and A. H. Byington and Charles E. Daily were among the most active members. An immense amount of relief was furnished to Connecticut soldiers who languished in the various hospitals. During the last year the agency was directed by Rev. W. A. Benedict, a zealous friend of the soldier. The *Palladium* said of him: 'Under his administration, hundreds and thousands can bear witness to its value in relieving those needing its service; and not a few owe their lives to the protecting and ministering spirit of this wise provision of State benevolence.' Towards the close of the rebellion, Mr. Benedict undertook the gratuitous collection of soldiers' claims under State authority. During the first year of this service, three hundred and thirteen claims were col-

lected, involving upward of fifty thousand dollars, without a cent of expense to the claimants; thus saving to the soldiers interested, at least seven thousand dollars, which they would have paid to the professional claim-agents."

An interesting event in the history of the academy during Mr. Benedict's incumbency was the introduction in, 1848, of 11 Indian youth, and soon after 6 more—17 in all—from the Chickasaw nation.

The Department of the Interior had not then been established in our government, and these youth had been placed by Wm. L. Marcy, Secretary of War, under the tuition of H. V. Johnson of Kentucky, who was of the family of Richard M. Johnson, the famous Indian killer. As pupils in the Johnson school, these young Indians fared but little better than Tecumseh and his warriors on the field of battle; their education was but slightly, if at all, cared for, while they were indulged in the free use of Kentucky whiskey. When these facts came to the knowledge of the Secretary of War, he at once decided on the removal of his wards to some institution in New England. In college days he had been familiar with Rev. Alvan Bond, D.D., of Norwich, and he resolved to consign the youth to his care, that they might escape the inevitable vices of their Kentucky home, and enjoy improved chances for obtaining a respectable education. They were sustained from the annual stipend paid to their nation by the United States Government. Dr. Bond immediately took measures to place them in the academy at Plainfield. They were generally bright and intelligent, but exhibited no special aptitude for scientific or literary acquisition, and generally excelled only in those school exercises which brought into use their imitative faculties, such as penmanship and drawing, in both of which several of them became decided proficients.

Our New England climate seemed unfavorable to their health, and before their course of study was completed, no less than six of them died of pulmonary disease; and in 1852 this plan of education, which promised much good to these sons of the forest, was abandoned, and the survivors returned to their home in Indian Territory; not, however, without receiving an education which has rendered them eminently useful to their nation in many ways, some of them taking influential and responsible positions among their own people.

Any plan, for the complete education of any portion of a race whose national habits, from remote generations, have been so entirely unscholarly as the Aborigines of America, should be applied at the earliest practicable period of infancy; and probably generations will pass before the higher intellectual attainments can be reached. Few nations are farther removed by their general characteristics and habits from the scientific sphere, than the Indians of our country. Even the African is more readily subordinated to studious habits, while the Chinese and Japanese who come among us, make highly creditable literary and scientific progress.

WORD STUDY—No. II.

BY PROFESSOR H. N. DAY, NEW HAVEN.

We indicated in the previous paper that the content of every proper word is a form of thought—of discursive thought, as it is sometimes redundantly expressed; and that, consequently, the forms of thought must ever determine the kinds and forms of words—must determine what kinds and what forms should appear in a developed language. Leaving out of view all expressions characterized by feeling, all ejaculations, or, grammatically speaking, all interjections, and also all the proper personal or grammatically styled pronominal elements, as well as all mere expletives, and confining our attention to the pure, simple sentence as the proper verbal expression of the simplest form of thought—a simple judgment—we found the most generic distinction of proper words to be that into the three classes of subject-words, attribute-words, and copula-words. The copula-word or grammatical verb in so far as an expression of the copula, suffers but one kind of modification—the grammatical mood—giving the unmodified form, the so called indicative, and the two generic modified forms, that modified in respect to the thought itself as necessary or contingent, and that modified by the presence of feeling or will. The nature of thought thus determines all the possible modifications of the copula-element so far as it can appear in speech—the time or tense modification being utterly foreign to the copula or thought-element which is ever present in respect to time when going forth into speech.

The other two classes of words named subject-words and attribute-words are object-words, being expressions of the object with which the thought is concerned. The subject-word expresses the object regarded in thought as a whole containing certain parts or attributes, more or less of which are expressed in the attribute word or proper predicate of the sentence. When I say *Venus is bright*, I merely express my thought that *Venus*, as a whole, contains *bright* as one of its attributes. Let it be said just here that Venus, as a real existence, is nothing else than its aggregate of attributes. There is no such real thing as Venus apart from its attributes. The expression of the thought, therefore, that Venus is bright, is simply an identification of Venus with one of its attributes. To talk of a substance as having a real

existence, and yet without any attributes, is to talk sheer nonsense. It is the old woman's gun in the story, that has neither lock, stock, nor barrel. The anxious mother's persuasion that there was still a veritable gun, all of the parts of which were wanting, is just as reasonable and altogether more pardonable than the very prevalent persuasion even among philosophers and thinkers that there is a veritable thing called substance, which is below and behind all attributes, and which exists, or may exist without them.

But to return. The subject-word expresses that of which some attribute may be thought—that is, an object which is or may be regarded as a whole having parts called attributes. It is the proper grammatical *noun*, which is rightly defined as the name of a thing.* It is well called the *substantive*—substance-word—which term exactly expresses its nature and function. *Abstract nouns* express attributes, indeed, but attributes of which some other attribute is thought, and consequently attributes regarded as substances. Moreover, the first object of which I think is necessarily one and single—Venus; but I find another single object that has the same attribute as Venus, *bright*. I call these by a name common to both—*planets*. Hence the distinction of proper and common nouns. Thus all the kinds of nouns or subject-words are determined by the forms of thought, and are to be ascertained and defined accordingly.

The other class of object-words express attributes, or that which is thought of the subject. The nature of thought exactly determines the generic classes of the forms in which attributes are expressed in language. There can be in the nature of the case but four of these generic classes. This is easily shown. Thought, as has been already intimated, in the necessities of its own nature ever regards an object as a whole having parts or attributes. In this relation of a whole and its parts, it is evident I must think of any part or attribute either by itself without reference to the other parts, or with such reference. All attributes are therefore either attributes of property or attributes of relation; that is, if the view of thought be wholly confined to the object, the attribute which it recognizes is an attribute of property; if not so confirmed, it is an attribute of relation. But the first class of attributes admits a sub-division which grammar needs to notice. There is a difference between the attributes *heavy* and *gravitating*, that does not exist in the object; for anything that is heavy, gravitates. It is a mere difference in the mode of our thought. The one is familiarly known as the attribute of *quality* and is expressed in the form of the grammatical adjective; the other is the property of *action*, and is more commonly expressed in the grammatical verb. The attributes of relation suffer also a sub-division into the two species of attributes of *condition*, in which the relation is to the whole, and of the *relation proper* in which the relation is to some other part of the whole. It is in the form of the thought thus that we find the ground for distinguishing the form of each kind of attribute in language.

A still more important distinction in regard to the use of attribute words in language is founded in the very relation of thought. It is a distinction that is ignored by many grammarians, and erroneously explained by others. The distinction is that into Definitives and Epithets or Descriptive Adjectives. Every one recognizes the difference in the force of the adjective *round*, in the expressions *round stones* and *round sun*. It limits or modifies in each expression the meaning of the noun, as every adjective does, but in a very different way. In the first case, it limits as to kind or number; in the second case, it limits as to the attribute. In the first case, the view is directed upon one class of stones; in the other case, on one of the attributes of the *sun*. Definitives accordingly limit in respect to the class or number; Epithets, in respect to the attributes. The distinction is grounded in the process of thought distinguishing subject from attribute. It may be remarked that here, as elsewhere, language does not always provide a distinct form of word for every form of thought; and, moreover, it often borrows a form introduced to mark one form of thought to express another.

If we ask why language has adjectives, the answer is because the distinctions in thought, not strictly the distinctions in the external objects, require them. First, the attribute is thought, which appears in the predicate of the sentence—the sun is round. Then the thought, in limiting itself to one part of the attributes which makes up the notion of *sun*, and still regarding its object in the actual or possible relation of a subject, expresses itself in the union of an attribute-word with a proper subject-word, as *round sun*.

One more distinction in this class of attribute words we must notice in this paper, which is determined and explained by the nature of thought. It is the grammatical distinction of adjectives, indicated in what are called the *degrees of comparison*. There are commonly reckoned three degrees. The first is that in which no comparison, and, of course, no degree is expressed—*the positive*—as Solomon was wise; the second, that in which a higher degree of the quality is expressed—*the comparative*—as Solomon was wiser than all other men; and the third, that in which the highest degree is expressed—*the superlative*—as Solomon was the wisest of men. The absurdity of this whole explanation is exposed at once by comparing the last two examples. The superlative form does not express a higher degree of the quality of wisdom obviously than the comparative form, as the usual definitions indicate.

The distinction of the two forms is given in the

* *Thing* etymologically signifies object thought—being made up of the demonstrative—objective—*th*, and the suffix *ng* denoting action or act, mental action or thought being the primitive form of action and the ultimate ground of the notion.

nature of the thought to be expressed. Under the general principle already referred to, all thought proceeds in the relation of whole and part. In comparing one object with another in respect of the quality, therefore, thought necessarily views the former as a part in reference to the other parts, or as a part in reference to the whole; in the one case it expresses itself in the comparative form; in the other in the superlative form. The true exposition of the distinctions of adjectives in respect to comparison then is this: the attribute expressed by the adjective, is thought either without comparison of the object, when the positive form is used, or with such comparison. In this latter case, there are two forms used—one, the comparative, when the object is compared with one or more objects of the same class excluding itself; the other, the superlative, when it is compared with the whole class, including itself. This is one illustration of the errors, not to say absurdities, to which one is liable in confining the study of language to the word-forms, to the exclusion of the study of the thought forms of which language is the expression.

The remaining class of object-words consists of those which modify attribute-words—the grammatical *adverb*. The difference between the adjective and the adverb is thus seen to be grounded upon the fundamental distinction in thought of subject and attribute. Adjectives modify subject-words; adverbs modify attribute-words.

The simple sentence, then, when analyzed, gives us as founded in the essential nature and fundamental distinctions of thought, the two generic classes of words, —copula-words and object-words—with their respective modifiers, this second class being subdivided into subject-words and attribute words. We thus have the following enumeration of the essential parts of speech:

I. Copula-words and their modifiers—modals.

II. Object-words, embracing (1) subject-words with their modifiers—adjectives; (2) attribute-words with their modifiers—adverbs.

Young Teachers' Department

TEACHING.

BY A. MORSE, HARTFORD.

Teaching children is quite different from hearing recitations. The latter may be a very easy matter, requiring but little education, not much skill, a moderate share of patience, little preparation for the work, no zeal, and is worth next to nothing when it is done. The former requires high culture on the part of the teacher, as preparatory to the work, a lively interest, perfect familiarity with every subject taught, skill and tact in presenting thought to the mind, and deep devotion to the work; then an inspiration goes forth, waking up the class, securing fixed attention, without which there is no teaching, with which the mind receives nourishment, and gains strength by exercise. Are there not many teachers, holding places in our schoolrooms, who make not this discrimination, but really think that in going the rounds of recitation great good is accomplished? Is it true that a mark in the class-book, indicating the degree of excellence with which the words of a lesson have been uttered, is evidence of a knowledge of the subject; or does it show culture or self-reliance on the part of the scholar? I remember, when in college, our tutor was in the habit of bringing into the classroom his manuscript keys, with the solutions and answers to questions in algebra. The scholar whose work and answer on the black-board corresponded to the tutor's key, would find his mark on the class-book, at the top of the list, though he might have borrowed every figure of his solution from his neighbor whose mark was not so high upon the class-book. What teacher has not heard scholars say, "I can recite the lesson, but I don't understand a word of its meaning"? What teacher has not been disappointed, when, having called upon a scholar, after a glib recitation, for the meaning of a word or a sentence, upon which the central idea of the recitation rested, and having found no thought or knowledge beyond the words? It is the same thing, whether in college or in the primary schoolrooms, though rather worse in the latter, as early habits should be correctly formed. Is it not true that there is a kind of "school-keeping" rather showy and attractive, neat and pretty in many respects, yet satisfied with hearing of recitations instead of teaching? Were it true, as a general thing, that children loved study, and naturally desired to investigate and understand every subject presented to the mind, then it might follow that the manner of reciting a lesson would indicate the degree of knowledge possessed, and the teacher might feel satisfied that the scholar was making real progress; but, inasmuch as we know that many children, whether in the Primary-room, High-school, or College, love easy lessons, or are willing to have them made easy by some other means than hard study, then it becomes us as teachers to observe the wide difference between teaching and hearing lessons. It is often said that children would love their school, and love study, if the teachers would only make the lessons and the exercises interesting; there is some truth in this, and there is a good deal in it that is not true.

Teachers should endeavor to make the schoolroom pleasant and cheerful, and should so conduct the class-exercise as to add to the interest which the lesson possesses in itself; but if the child is playful and inattentive, and has made little or no preparation by study, then it is a question whether that lesson should be made interesting by the teacher's doing for the child what the child had the ability to do, and should have done, as preparatory to the recitation. Teachers may differ in opinion here as to doing work for scholars that they should do for themselves. Some teachers, in their kindness of heart, while desiring to do the best thing possible for their scholars, actually do them permanent injury. They will explain, they suggest, they draw out by question, or they partially answer questions, as they say, helping the child a little over the hard places. The child is pleased with this sympathy, this helping-hand of the teacher; all goes beautifully for a time, the school is regarded as remarkably successful, the teacher very popular. But by and by this interest wanes; there is a loss of interest; the charm has gone. What is the trouble? Too much of the scholar's work has been done by the teacher, and little true growth or mental strength has been secured by the scholar. The child has formed the habit of waiting for the teacher, to clear up the doubtful places, make lucid that which is obscure, and to remove all obstacles that interpose. The habit of self-reliance and investigation is in the teacher, and has been transferred to the scholar. "I can do it myself. I don't want any showing. I want the pleasure of finding it out all alone." These expressions are never heard from a large class of scholars. They would rather ride a "pony" of any sort than go a-foot, when they know that the strength which enables them to walk unaided through their course, is worth more to them than all external powers of locomotion, and teachers, I think, are convinced that *investigation*, or the habit of looking into the nature of thought, is of more importance than all else in true scholar-making. The teacher who has succeeded in laying this foundation has begun for the scholar that upon which the whole future life may be employed, in building, furnishing, filling and ornamenting. This sort of work cannot be accomplished by hearing recitations merely. There must be teaching in its best sense. Education is a growth, a symmetrical development of all the embryo elements of childhood into maturity and manhood. It is not the work of a day, nor of one school department; but, commencing with the primary, it goes on from one department to another, gaining strength as it proceeds. The true teacher who is interested in, and devoted to helping on this work, is nobly employed, and need not seek a higher vocation, but higher attainments, which will give greater success in this. In teaching, mind should work with mind, influencing it, elevating, enlarging, invigorating, ennobling and purifying it. Is it not a little humiliating to meet with so many among teachers that seem to have so little appreciation of the true character and greatness of their work, the good they might do, or are doing? A greater interest is to be awakened ere long on the subject of education. Though much has been done, it will soon be found that there has been much left undone, and teachers must lead off in this new work, or they will be required to leave the track for others. Parents also have something more to do in the way of encouraging and sustaining teachers, and of more heartily co-operating with them. Certainly parents are interested in the welfare of their children, and pay most liberally for their education. The Commonwealth is also interested in all that tends to advance its highest interests, and yet there seems to have been little or no notice at all taken of this truly appalling fact—that, at the same time that the expenses for education have been doubled or quadrupled, there has been a corresponding increase in the demand for reform schools, houses of correction, jails, prisons and penitentiaries. Is education the cause of this latter demand, or is there some element lacking in our system; or why is such the fact? Are we not all equally interested in this great question—citizens, parents, teachers and scholars? Might we not, by comparing notes, by consultation, and co-operation, improve upon the present state of things?

EVENINGS WITH THE STARS.—No. III.

BY W. B. DWIGHT, NEW BRITAIN.

A few suggestions will now be made in regard to the proper arrangement for conducting a class in star observation. These are very simple, but it is exactly by attending to these simple details that teaching is perfected. We consider them all important in their place, and while many teachers would by the fine instinct with which they are exceptionally endowed, adopt them at once of their own accord, there are many others who would come to them only through some mortifying failures, which we would fain save them.

It may be first suggested, that unless circumstances seem to *require* this instruction of the entire class, or school, that the exercise of star-gazing be made entirely optional. We see no profit to either party in dragging out unwilling, unappreciative pupils, and compelling them to pick out constellations which they will look at without one throb of pleasure, and forget forever when the instruction is closed. Moreover, it will be found almost an impossibility to bring such pupils to see anything systematic in the sky. A certain amount of ardor, of imagination, are needed to construct the somewhat weird figures which ancient fancies have transmitted to us, and through them to see the real glory of the theme. For it must be kept strictly in mind that the charm of the thing is not in the quaint form which the Chaldean or Alexandrian astronomers may have selected for us, but in the intrinsic grandeur which glorifies any honest expression on the part of a sincere student. Just as the truths of the Bible are not dependent in any way on the quaint and sometimes uncertain language of the prophet, or of the translator, but have an inherent splendor which is ever bursting forth from any sincere expression that may fall from human lips.

Pupils that do not have it in them to enjoy these noble lessons, gain nothing, will not be better men, or better citizens, by your labor, but they will very seriously hinder all the earnest ones in the study. Let them therefore stay at home.

It is not meant that the whole study of astronomy should be optional with a class; its main topics of revolution and rotation, of the seasons, of lunations, &c., have a more or less practical bearing, are an almost necessary part of a respectable education, and at the same time do not require that peculiar appreciation of what is great in nature which is needed in the study of the constellations.

It will be, therefore, preferable to advise those not interested, not to come to the field observations; yet it will be proper for the teacher to use judicious means to stimulate some of the dormant minds, and to awaken an interest when it really exists, but is latent.

Another important point is not to have too many under field observation at once. Fifteen would be a convenient number; twenty, much less satisfactory to manage, and over this number quite difficult, unless some of the older or brighter ones can be used as assistants; in which case the number may be indefinitely increased. As soon as the teacher discovers those who are so quick and earnest that they grasp the subject at once, he should avail himself of their help. Practically this will be the working:—the teacher will gather around him the whole class; he will direct their attention to the group of stars under consideration; he will remind them of what he has previously shown them on the map; he will trace out all the features clearly, as his pupils seem mainly to succeed in following him. He comes to a pause, "Now how many can point out this constellation?" Probably not half the number will raise their hands. The remainder must be dealt with over and over again, patiently, and in some cases singly. Let him now appoint at least one who has promptly mastered the whole scene, to take some of the slower ones again over that portion of the chart, and then to retrace for them the same in the concave overhead. The assistance will often be very marked. Sometimes it is best to appoint such an assistant to preside over the chart, which ought always to be on hand, and to trace the group for some, while you are pointing others to the actual stars.

The remaining preliminary suggestions must remain over till the next paper.

MISCELLANY.

RECENT RESEARCHES ON INSTINCT.

A very interesting and instructive paper on Instinct was read before the Section of Zoölogy and Botany, at the late meeting of the British Association by Mr. D. A. Spaulding. His aim was to settle the question whether, as some have urged, the supposed examples of instinct are after all only the results of rapid learning and imitation. The controversy on this subject has been chiefly concerning the perceptions of distance and direction by the eye and ear. Against the instinctive character of these perceptions it has been argued that, as distance means movement or locomotion, the very essence of the idea is such as cannot be taken in by the eye or ear; that what the varying sensations of sight and hearing correspond to, must be got at by moving over the ground, or by experience. The results, however, of experiments on chickens were wholly in favor of the instinctive nature of these perceptions. Chickens kept in a state of blindness by various devices, from one to three days, were placed in the light under a set of carefully prepared conditions; and the results of the experiments are stated as follows:—

"Often, at the end of two minutes, they followed with their eyes the movements of crawling insects, turning their heads with all the precision of an old fowl. In from two to fifteen minutes they pecked at some object

showing not merely an instinctive perception of distance, but an original ability to measure distance with something like infallible accuracy. If beyond the reach of their necks, they walked or ran up to the object of their pursuit, and may be said to have invariably struck it, never missing by more than a hair's breadth; this, too, when the specks at which they struck were no bigger than the smallest visible dot of an *i*. A chicken, at the end of six minutes after having its eyes unveiled, followed with its head the movements of a fly twelve inches distant; at ten minutes, the fly, coming within reach of its neck, was seized and swallowed at the first stroke; at the end of twenty minutes it had not attempted to walk a step. It was then placed on rough ground within sight and call of a hen, with chickens of its own age. After standing chirping for about a minute, it went straight towards the hen, displaying as keen perception of the qualities of the outer world as it was ever likely to possess in after life. It leaped over the smaller obstacles that lay in its path, and ran round the larger, reaching the mother in as nearly a straight line as the nature of the ground would permit. Thus it would seem that, prior to experience, the eye—at least the eye of the chicken—perceives the primary qualities of the external world, all arguments of the purely analytical school of psychology to the contrary notwithstanding.

"Not less decisive were experiments on hearing. Chickens hatched and kept in the dark for a day or two, on being placed in the light, nine or ten feet from a box in which a brooding hen was concealed, after standing a minute or two, uniformly set off straight to the box in answer to the call of the hen which they had never seen and never before heard. This they did, struggling through grass and over rough ground, when not able to stand steadily on their legs. Again, chickens that from the first had been denied the use of their eyes by having hoods drawn over their heads while yet in the shell, were while thus blind, made the subject of experiment. These, when left to themselves, seldom made a forward step; their movements were round and round, and backward; but when placed within five or six feet of the hen mother, they, in answer to her call, became much more lively, began to make little forward journeys, and soon followed her by sound alone, though of course blindly. Another experiment consisted in rendering chickens deaf for a time by sealing their ears with several sheets of gun paper before they had escaped from the shell. These, on having their ears opened when two or three days old, and being placed within call of the mother concealed in a box or on the other side of a door, after turning round a few times, ran straight to the spot whence came the first sound they had ever heard. Clearly, of these chickens it cannot be said that sounds were to them at first but meaningless sensations.

"One or two observations favorable to the opinion that animals have an instinctive knowledge of their enemies may be taken for what they are worth. When twelve days old, one of my little *protégés* running about beside me, gave the peculiar chirp whereby they announce the approach of danger. On looking up, a sparrow-hawk was seen hovering at a great height overhead. Again, a young hawk was made to fly over a hen with her first brood of chickens, then about a week old. In the twinkling of an eye most of the chickens were hid among the grass and bushes. A young turkey gave even more striking evidence. When ten days old it heard the voice of the hawk for the first time, and just beside it. Like an arrow from the bow, it darted off in the opposite direction, and crouching in a corner, remained for ten minutes motionless and dumb with fear. Out of a vast number of experiments with chickens and bees, though the results were not uniform, yet in the great majority of instances the chickens gave evidence of instinctive fear of these sting-bearing insects."

SLEEP.

In 1855, it occurred to Dr. Fleming, then a professor in Cork, to try the effect of compressing at the upper part of the neck the carotid arteries, two of the vessels which convey the vital fluid to the brain. He requested a friend to make the experiment on himself. The result was the production of a state of complete unconsciousness, in which, however, the subject of the somewhat hazardous experiment dreamed with great activity, a few seconds appearing as hours, from the number and rapid succession of the thoughts passing through his mind. The effects passed off on the removal of the pressure from the vessels. This was clearly a very different condition from that of stupor, and one not distinguishable from ordinary sleep. Dr. Fleming was cautious in drawing conclusions, but he threw out the suggestion that possibly after all ordinary sleep might be connected with an opposite cerebral condition to that commonly assigned as its cause. In a few years this was placed beyond all doubt. Mr. Durham, a London surgeon, and almost simultaneously Dr. Hammond of New York, showed, by a series of experiments on the lower animals, the results of which were first published in 1860, that during sleep the brain is in a comparatively bloodless condition. The experimenters observed the brain becoming pale, and sinking down as sleep came on; and as that condition passed off, they saw its surface rising up and becoming suffused with the red blush of the returning circulation. At the period of complete awakening, the vessels became more full and distended, and a large number sprang into sight which had been invisible during slumber. These experiments, when viewed in connection with that of Dr. Fleming before mentioned, proved conclusively that the immediate antecedent of sleep is a diminution of the stream of blood flowing to the brain, which condition lasts during the continuance of sleep.

This discovery was at once seen to harmonize with

everything known concerning the determining causes of sleep—that is, the conditions which tend to produce it. Great loss of blood, for example, predisposes to slumber. In such circumstances, the brain is brought accidentally into a state analogous to its condition in ordinary sleep. Heat is conducive to sleepiness, because it draws the blood to the surface of the body and the extremities, thus diminishing the supply to the brain. Moderate cold has ultimately a similar somniferous influence, and for precisely the same reason. Intense cold, on the other hand, has an opposite effect upon the circulation. It drives the blood from the surface to the internal organs, including the brain, in which it accumulates. The consequence is the induction of a state not of sleep, but of coma, in which the unfortunate victim soon sinks. The inclination to sleep after a hearty dinner is due to the fact that, at such a time, the stomach, in obedience to a law to which we shall presently advert, requires an increased supply of blood to enable it to discharge its function. For this it is obliged to draw on the other parts of the system, including the brain. Monotonous sounds conduce to slumber, by tiring out the brain, thus diminishing its activity, and consequently rendering necessary a smaller flow of the vital fluid towards that organ. On the other hand, everything productive of mental excitement of any kind, including even the anxiety to invite the approach of slumber, is directly hostile to it, because activity of the brain requires, as a prime necessity, a flow of blood towards that organ, inconsistent with the physical conditions of sleep. This discovery of the comparatively bloodless condition of the brain during sleep brought out also a perfect harmony in the law of nutrition of the different parts of the system. Every one of the bodily organs exercises its function at a considerable expenditure of its own substance. Its period of activity is for itself one of constant wear and tear. Part of its structure is being constantly oxygenated, and thrown off as waste matter. This, of course, renders necessary a compensating process of reparation. The necessity of the periodic quiescence of an organ lies in the fact, that it is only then that its nutrition is possible. During its time of activity, its force is expended in the exercise of its function. To enable it to perform it, there is an increased determination of blood to the active organ. When it has done its work, this excess of supply of the vital fluid is drained away to other organs, whose periodic activity is commencing. Then begins its season of rest. Though its supply of blood is now much smaller, the fluid circulates more slowly, and the conditions are the most favorable for the assimilation of its elements, and thus repairing the losses sustained during its period of functional activity. The heart has thus a short season of activity, followed immediately by a shorter one of rest. In the case of the lungs, the periods alternate at somewhat longer intervals. The brain has a very much longer period in which it is able to work without interruption, and this is followed by a season of repose about half as long. This rest of the brain is sleep, and its use, physiologically speaking, is to afford opportunity for the nutrition of the organ.

But though the discovery of the anæmic condition of the brain in sleep satisfactorily explained some things which were before inexplicable, the cause of that bloodless condition was itself an enigma. Like a dark lantern, the discovery referred to flashed light in every direction in which it was turned, but showed nothing of what was behind it. By what force is the blood held back from the brain? To this it might seem at first blush an adequate reply to say, that the stoppage of the organ's activity renders unnecessary an excess of the vital fluid, required only while it is discharging its functions. But apart from other objections to this view of the matter, it reverses the sequence in which the phenomena actually occur. The diminution of the supply of food precedes, not follows the cessation of functional activity. Fleming's experiment, to which we have referred, shows that sleep is at once produced by partly stopping the channels through which the vital fluid is conveyed to the brain. It would appear, therefore, that some special mechanism is required to secure at the proper moment the diminution of the streams flowing to the organ. The object to be effected is of sufficient importance to make us look for some special arrangement. That object is to stop at once the complicated machinery of an organ whose ramifications extend to every part of the body, to obliterate thought, to overmaster volition, and "steep the senses in forgetfulness." Every one knows how thoroughly effective is the means used for this end. Who has not been obliged to succumb to the imperious power of sleep, in spite of every effort to escape its thralldom? People will sleep undisturbed amid noises so loud, that "with the hurly death itself awakes." In the battle of the Nile, many of the ammunition boys fell asleep, notwithstanding the roar of the conflict and the dread of punishment. After the battle of Corunna, whole battalions of English soldiers on march slept while in rapid motion. Damiens, who attempted to assassinate Louis XV. slept on the rack while being subjected to dreadful torments, and he could be kept awake only by changing the mode of torture. It is also to be noted that, whatever be the mechanism for restraining the flow of blood to the brain, it cannot be under the immediate control of that organ. The brain is unable to superintend an arrangement for the stoppage of its own function. Every exertion of its own to bring on sleep thoroughly defeats its object.

This brings us to the last important contribution to the physiology of our subject. In 1868, Mr. C. H. Moore published a very ingenious essay, in which he endeavors to solve the problem of the comparatively bloodless condition of the brain in sleep. He shows that this object can be effected in no other way than by

a contraction of the arteries which convey the vital fluid to the brain. The mode in which this contraction is brought about is not difficult to understand; but it is necessary to premise one or two elementary physiological facts. The walls of the blood-vessels consist of several coats, one of which is of muscular fibres which encircle the whole artery or vein. When these fibres contract, they necessarily narrow the calibre of the vessel, and they are connected with nerves which regulate their contraction. The whole nervous mechanism of the body consists of two sets of nerves and nerve centres—namely, the cerebro-spinal system, composed of the brain, the spinal cord, and the nerves connected therewith; and the sympathetic system, consisting of a chain of small knots of nervous matter (or *ganglia*, as they are called) lying in front of the spinal column, and connected by nervous cords with the cerebro spinal nerves. In regard to nervous force, the sympathetic system has partly a primary independent power of its own, and is partly controlled by the great cerebro-spinal system. Now, the nerves which control the contraction of the arteries of the neck proceed from the sympathetic system. The brain itself sends no nerves to its own arteries. Hence, in the matter of the supply of blood, that organ is subjected to a mechanism over which it has no direct control. The key of the position is in the keeping of the ganglia of the neck, and if it were possible for them to use their power autocratically, they could at any moment lock up in slumber the great organ above them. They have only partly to turn the stop-cock—that is, to exert their force on the muscular walls of the arteries, when the contraction of the latter would render the brain as powerless as a steam-engine with the motive-power turned off. We have seen that the ganglia have such a power; but of course they do not exercise it under any conditions implying intelligence or volition. Mr. Moore's theory is, that while the primary force of the ganglia tends always to contract the arteries, their power is kept in abeyance while the brain is in a state of activity by its exercising over them an overmastering force. But when the brain becomes fatigued, this inhibitory force is first diminished, and then ceases, and as the ganglia are liberated from control, they begin to put forth their native power over the muscular walls of the arteries, with the almost immediate effect of diminishing the flow of blood to the brain, and locking up that organ in sleep. Before perfect sleep supervenes, however, there is occasionally a struggle for empire; the brain resumes by snatches a temporary sway over the ganglia, until it is no longer able to continue the conflict. During sleep the brain throws off the unremoved effete matter which had latterly clogged its operations, and given rise to the feeling of weariness, premonitory of slumber, and it assimilates new material for the repair of its own substance. When thus invigorated, it is in a position to reassert its power over the ganglia; its arteries, liberated from the contractile force, expand to their usual dimensions, and the flow of the vital fluid to the brain restores the physical conditions of that organ's activity.

It would be difficult to obtain direct verification of Mr. Moore's theory, but the fact that it renders possible a satisfactory explanation of the cause of dreaming and somnambulism, gives it some indirect confirmation. Dreaming is a state of imperfect sleep, in which some of the mental faculties, notably the memory and the imagination, are in active operation, while the other mental powers, and the power of sensation, are in abeyance. In somnambulism, also, certain senses and faculties are completely suspended, while others are in active exercise. The simplest case of that condition is sleep-talking, in which the power of articulate speech has escaped the spell laid on the other faculties. In the more remarkable cases, the locomotive apparatus is also emancipated. In regard to his mental condition, the somnambulist may be described as alive to objects of attention, and wholly indifferent to objects not within the range of his train of thought. On awakening, he usually has no recollection of his previous condition; but on again relapsing into somnambulism, he continues the line of thought and action developed from the associations which his mind received on the former occasion. Both dreaming and somnambulism, therefore, imply a completely torpid state of some parts of the cerebral apparatus co-existing with the exemption of other parts of it from the somnific control. Now, though the minute topography of the brain given by phrenology may not be correct, there are reasons independent of the principles upon which that science is based for believing that to different parts of the brain are assigned different functions. If this be the case, the phenomena of the two conditions we are considering would be explicable on the assumption, that while the supply of blood was reduced in some segments of the brain to the sleeping-point, in other parts of the organ it flowed in unabated force. This abnormal condition would be produced by the unequal contraction of one or more of the cerebral arteries, resulting from an imperfect action of the ganglia, and this imperfect ganglionic action in its turn might be caused either by a partial failure of their automatic power, or in their force being partly neutralized by that of the brain. —Chambers' Journal.

EATING AND DRINKING.

CLASSIFICATION OF FOODS.

The classification of foods now accepted by men of science is perfectly simple and easy. All the substances used come under one of four heads. These are:

1. Proteids.
2. Fats.
3. Amyloids.
4. Minerals.

The proteids are generally known as albuminous, or nitrogenous substances. They take first rank in the material for building up the fleshy part of the body.

They include the gluten of wheat, the albumen of white of egg, the muscle of flesh, the casein of cheese, and a few other unimportant substances.

The fats include all oils and fats, whether animal or vegetable. They are called the non-nitrogenous articles of diet, because they contain no nitrogen. Butter, fat meat, vegetable and animal oils, oily nuts, etc., etc., are of this class. They are also called hydro-carbons.

The amyloids include starch, dextrine, sugar, and gums. They are also non-nitrogenous and hydro-carbons; but the hydrogen and oxygen are in the form of water, while in the fats the oxygen is not in sufficient quantity to satisfy the affinity of the hydrogen.

The minerals are water and certain salts of alkalies, and other substances, such as go to make up the bones and teeth, etc., or act as regulators to nutrition.

None, however, of these substances alone will perfectly nourish the body. All of them must be present. The food which Nature has provided for the newborn babe is the only one which perfectly illustrates a combination of them all.

1. The curd of milk is a *proteid.*
2. The cream or butter of milk is a *fat.*
3. The sugar of milk is an *amyloid.*
4. The water, magnesium, potassium, iron, sodium, lime, phosphorus, etc., are the *minerals.*

Is this not simple and beautiful? How perfectly good milk nourishes the young. If in after years, when we eat and drink what we please, we were to choose food so wisely adapted to our wants as the Creator does for the child, it would not only save much suffering, but greatly add to our efficiency.

Now let us look at the functions of the different kinds of foods. This subject is not so well understood as we wish it was; still what is known will help us to decide somewhat as to the choice of articles of diet. First in the list come the *proteids.* What is their function in the body? One point at least seems settled, that their chief value is to construct and repair the tissues of the body. The nerves, the muscles, the glands, the secretions of the mouth, stomach and alimentary canal which help to transform our food, are all *proteids.* Parke says that every structure in the body in which any form of force is manifested, as heat, electricity, or mechanical action, is mainly built up of these proteids. This is so the world over. May we not then, safely conclude, that the main function of the proteids is to build up and repair certain tissues of the body? It is also believed that by oxidation they develop some heat, and a small portion of the strength of the frame. If the proteids are cut off the functions of the body languish. If we wish to increase the power of the body to do work, we must invariably increase the consumption of proteids.

THE FATS AND THEIR FUNCTION, OR USE.

The fats are, in the scientific works on food, called hydro-carbons. They contain some oxygen, but never enough to satisfy the affinities of the carbon and hydrogen. For this reason they are powerful generators of heat. An ounce of fat burned in the fire generates a large amount of heat. An equal weight of it when burned will produce two and a half times as much heat as dry starch, or sugar. Some idea of its wonderful heating properties may be gained by the fact that ten grains of fat burned so as to save all its heat, will raise the temperature of twenty-three pounds of water one degree. This is sufficient to raise 18,000 pounds of weight one foot high. The two great uses, then, of fat are, first, to maintain animal heat; and second, to generate force. It is very easy to see how it does the former, by burning in the body; but how heat becomes force is not so easy to see. That it does in the steam-engine is evident, and the same is true in the body. The man who does a hard day's work, does so by virtue of the fact that he is, so far as the labor is concerned, an engine. The muscles do not furnish the strength, they only transmit it. The wheels of the engine do not furnish the strength; that is the power behind them. Not only the heat of the body, but the working power of it, is largely due to the consumption of fat. (The reader must not confound fat with fat meat alone; butter is a fat, and so are oils and oily nuts.)

Still another use of fats is that, like the proteids, when taken into the body they enter into its structure, forming in all cases an essential part of muscle, nerve, brain, and other organs; and also entering largely into the adipose tissue.

Besides these important and principal functions of fat, it has minor uses in the processes of digestion, assimilation, and nutrition, and, it is believed, in the formation of bile. Food digests more readily if fat is mixed with it. It also takes an important part in the formation of cells, blood corpuscles, and even the generation of blood. It is present in large quantities in the tubules of the nerves; and in all the nervous centers, at least, serves some highly important function in nervous action.

Indeed the distribution of it in every tissue and its accumulation around certain organs, serves to fill up the cavities of the body and give roundness to the form, equalizes the external pressure, and diminishes friction; and by its bad conducting property retains animal heat. Fat, therefore, must ever be regarded as highly important to the physical development of the body, and any system of diet that excludes it is faulty and to be condemned.

An interesting case of the evil effects of the non-use of fats was recently brought to our notice. A gentleman of education and refinement, in rather feeble health, put himself under the care of physician who ordered him to abstain from all butter, sugar, salt, milk, meat, and to live exclusively on farinaceous articles and fruits. The result was that he lost rapidly in flesh and strength, and soon took to his bed. The physician insisting that he would in the end be better for this course, advised him to continue it. The patient thinking that hickory

nuts were not forbidden, purchased a quantity and ate freely of them. Being very rich in fatty matter, they supplied the place of butter and fat meat perfectly, and he soon became much better and believed he had made a great discovery in the dietetic value of this nut. We may add that it is excellent food for those who can digest it, and for those who abstain from animal fats it will often prove to be very valuable. Where oily foods are not used, the proteids exist in excess in the blood, and furnish more nitrogen than can be used. The result is that the system is poisoned by it and seriously suffers. —Herald of Health.

TALL TALKING.

The Greeks were great inventors of these sayings. On Dioneces, the Spartan, being told the number of Xerxes' army was so great that when they shot forth their arrows the sun would be darkened by their multitude, he answered, "If the Medes darken the sun, we shall have our fight in the shade." The American humor partakes slightly of the same character and extravagance, but it is, nevertheless, the growth of the soil. The vastness of the country, which is bounded on the east by the Atlantic ocean, on the north by the Aurora Borealis, on the west by the setting sun, and on the south by the day of judgment, and the peculiar circumstances in which the people are placed, can be traced in most of these stories. The hyperbolical or tall species of American humor was much in vogue some years ago, and such stories as the following were once very common: "A man was so tall that he had to go up a ladder to shave himself;" "another was so strong that his sneeze would kill a buffalo across the Mississippi river;" "a Massachusetts pig was so lean that it was necessary to tie a knot in his tail to prevent its getting through the chinks of the paling;" "an American artist painted a snow storm so naturally that he caught a bad cold by sitting near it with his coat off;" "some land was so rich that a squash-vine, in its rapid growth, overtook a drove of pigs;" "the reason why cream is dear is that milk has risen so high that the cream can't reach the top."

There is a capital story in which it is related that "a coach drove through the country so fast, that the milestones passed so quickly by, that the passengers thought they were in a churchyard." This coach, however, was beaten by the "skipper which went so fearfully fast that in sailing round Long Island she left her shadow three and a half miles behind her." Major N., when asked if he was seriously injured by the explosion of a boiler of the St. Leonard steamer, replied, "that he was so used to being blown up by his wife that a mere steamer had no effect upon him." The evidence of a witness in a life insurance case involved in the blowing up of a steamboat on the Ohio, is droll, just because it is characteristic. The witness knew the missing man, and saw him on the deck of the steamboat before the explosion. When asked by the lawyer: "When was the last time you saw him?" he answered, "The very last time I set eyes on him was when the biler burst, and I was going up. I met him and the smoke-pipe coming down." We all know that the American oysters are large, but that one must have been of extraordinary size which required three men to swallow it whole.

It is not fair that the foreigners should have all the lies to themselves; so we will let the Englishmen put in an appearance. A commercial traveler, boasting that his firm spent £300 a year for writing ink alone was answered, "During the last twelve months we have saved in that article alone £2,000, by merely omitting the dots to our i's and the crosses to our t's." One of the best specimens of rhodomontade is the following story, which we have not seen in print: Two men, who were famous for their vaporing, laid a wager as to who could tell the biggest lie. One said that he was in mid-ocean, far away from land, when he espied a man swimming. The ship was stopped and preparations were made for taking the man in, when he cried out "I am all right, and only want to know the latitude and longitude; for I am swimming to England." This seemed sufficiently improbable; but the other capped it by asking "whether his friend has seen the man again?" and being answered in the negative, said, "Then I am he." —British Quarterly.

THE TOLEDO UNIVERSITY OF ARTS AND TRADE (Toledo, Ohio.)—Jessup W. Scott, of Toledo, has bequeathed one hundred and sixty acres of land, valued at $80,000, to found an institution "for the promotion of knowledge in the Arts and Trades and the related Sciences, by means of lectures and oral instruction; of models and representative works of art; of cabinets of minerals; of museums instructive of the mechanic arts; and of whatever else may serve to furnish artists and artisans with the best facilities for a high culture in their respective occupations, in addition to what are furnished in the public schools in the city." The advantages of the institution are to be free of cost to all pupils who have not the means to pay for them, and they are to be open alike to both sexes. The board of trustees consists of eight citizens of Toledo, with the Superintendent of Public Schools of Toledo, the Mayor of Toledo, and the Governor of Ohio as *ex-officio* members. The board met Oct. 23, 1872, and organized by the choice of Hon. Richard Mott as president, and Col. D. F. DeWolf as secretary. The lands devised are located about three miles from the post office. They are to be laid out according to a plan prescribed by Mr. Scott, and the portion not used for university purposes is to be divided into lots and leased for five years, renewable at the option of the lessee on the basis of the appraised value at the end of each five years. It is hoped that other citizens of Toledo may increase the endowment, and that the institution may be made worthy of the city and the cause it is designed to promote.

THE COLOR OF FISHES.—A short paper (in French) was read at the British Association by M. Georges Pouchet on the mechanism of the changes of color in fishes and crustacea. The author referred to the fact that fishes often change in color according to the color of the objects by which they are surrounded: but he explained that this does not take place when the fish is deprived of the nerves that preside over the peculiar corpuscles to which the color is due. The change does not take place in blind turbots; and in the seeing turbot, if the nerves are divided which communicate between the eye and the skin, the change does not occur. If the fifth nerve is divided, the change takes place all over the body except the part to which that nerve is distributed. These experiments, M. Pouchet said, show that the change of color is dependent upon impressions received by the nervous system through the organs of vision. —Popular Science Monthly.

SIR JOHN LUBBOCK'S TAME WASP.—Sir J. Lubbock exibited a tame wasp which he brought with him from Pyrenees, and which had been in his possession about three months. The wasp was of a social kind, and he took it in its nest formed of twenty-seven cells, in which there were eighteen eggs; and, had the wasp been allowed to remain there, by this time there would have been quite a little colony of wasps. None of the eggs, however, came to maturity, and the wasp had laid no eggs since it had been in his possession. The wasp was now quite tame, though at first it was too ready with its sting. It now ate sugar from his hand, and allowed him to stroke it. The wasp had every appearance of health and happiness; and, although it enjoyed an outing occasionally, it readily returned to its bottle which it seemed to regard as a home. This was the first tame wasp, kept by itself he had ever heard of.

—Popular Science Review.

EDWIN FORREST'S Shakespearian Library, an invaluable collection embracing many works of great variety, was entirely ruined by a fire, which was caused by a defective flue on the morning of Jan. 15th. The collection was left in Mr. Forrest's will to the Actors' Home, and its destruction is an irreparable loss to dramatic literature. The library was worth $30,000.

ALL actors and wrestlers in Japan have been notified that they can pursue their professions three years longer, after which they must follow some more useful and honorable employment. The male Japanese have been informed that they will no longer be required to shave their heads, but the top-knot must be retained.

"HERE'S your in waders!" shouted a member of the 11th Mississippi regiment, as Gen. Lee's veteran army plunged into the Potomac, on its way to Gettysburg. "And here's your wetter-uns!" echoed a gallant soldier of the old 4th Alabama.

THE CONN. SCHOOL JOURNAL.

NEW HAVEN, MARCH, 1873

EDITORIAL.

IN all soberness, we think the constantly increasing extravagance which characterizes the attire of the fairer sex in our country, a powerful and insidious danger. The country is prosperous and wealthy beyond precedent; but no wealth can afford, in the long run, extravagant living. And what makes this national tendency the more dangerous, is, that it is not confined to the wealthier classes, who might best afford it. We are all more or less within the inexorable laws of fashion. All over the country, heads of families constituting the most substantial element in society—those who are thrifty enough, yet of moderate means, find themselves forced to attire their daughters in styles of dress demanding three times the amount of material really needed, and a useless frippery of complicated needlework, as expensive as it is absurd. This must however be done, if the daughters are not to be practically ostracised from the community. It would indeed be a treat to see the daughters of our land once more attired in the chaste simplicity of former days, and more skilled in handling the needle, than the less useful crochet-hook of modern maidenhood. Probably there is nothing short of a reaction of the strong common sense of our women and maidens, working in combined efforts, which will bring about a day of better things. Some years ago a band of the best ladies in Newark, N. J., set themselves against the tide, but the movement was not extensive enough to be of any avail.

Certainly for the purposes of school-work, simplicity is the only fitting garb. The overloaded georgeousness of the late Spingler Institute in New York City, was glaringly inappropriate and mischievous in a place consecrated to the education of young ladies.

We hail, therefore, as an eminently good sign, the sensible action recently taken by the older girls in the High School of Portland, Maine. Only let this become epidemic through the land, and it may overleap school house barriers and pervade the communities to the salvation of our country. We may also feel confident that these thoughtful maidens will lose nothing even in personal charms or presence by following the advice of the Bible, that their adorning be not "that outward adorning of plaiting

the hair and of wearing gold or of putting on apparel," but the ornament of a meek and quiet spirit, which in the sight of God is of great price.

The movement in Portland, which is not confined to dress alone, is reported as follows:

"The girls in the first class of the High School in Portland, between thirty and forty in number, have agreed, with only two exceptions, to adopt for a school dress a plain, substantial, and not expensive material. Overskirts, laces, and velvets are to be wholly discarded, and ribbons used only to a limited extent. No jewelry except a plain pin and one plain ring is to be worn. The girls agree to wear no other costume to school between this time and their graduation next June. Many pupils in the lower classes are following their example, and it is hoped that it may become quite general in the schools. Among the things discarded, slang talk may be mentioned, which they agree to drop entirely."

THE *Michigan Teacher* justly repels the serious charge recently made in high quarters against School Journalism. It is only one of those flippant remarks which will unavoidably creep into the best of journals, and we do not for a moment imagine that so just and excellent a paper as the *Christian Union*, in which it appeared, endorses the opinion. Yet, from its position, such an unfortunate remark has an influence which demands its refutation. The passage is as follows:

"Looked at with a just appreciation of the needs of the pedagogic profession, there is no department of literature more pitiable than that covered by publications devoted to teaching—the convention papers and teachers' magazines, so-called. As regards their professional matter, the numbers for this year might be transposed with those of last year, or the fifth, tenth, twentieth year before, if that were possible, and no one could detect the change. The same subjects are under discussion now as then, with scarcely an appreciable indication of the advance during the years that have intervened. Could the same be said of any of the publications of any other profession?"

The *Teacher* remarks:

"This man must have been in a Rip-van-Winkle sleep. No wide-awake reader, who has kept informed of the contents of school journals, will make assertions so rash. We know the teachers' magazines 'of last year, or the fifth, tenth, twentieth year before,' and affirm most emphatically that they have marked progress year by year, at even pace with the journals of any other profession."

After giving local illustrations of progress in School Journalism, it concludes thus:

"Let us have no disparagement of our serial literature. The profession may well be proud of it. Indeed, the chief obstacle to its success as a power in the intellectual world, is that it is too far advanced for the people and many of the school officers and teachers."

We do not wonder at the indignation here expressed. We do not know how much or little distinguished the writer may be who has thus committed himself against one of the greatest and most earnest instrumentalities of education. But this much is certain: the writer was entirely uninformed or mis-informed as to the history of School Journalism, its influences, its aims, its struggles and limitations, and its successes. Some day it will be a grateful task for some one to write a faithful history of this branch of educational literature; such a history will itself refute this mistaken assertion. We will not undertake any part of the task here. Perhaps it would only go for self-praise, after all; but we may offer a suggestion or two in the matter.

We do not feel sure, by any means, that all the subjects now treated of, are those of the past; at the same time we are quite aware that not in school literature alone, but in all literature, research shows that to a wonderful degree, past ages did grapple with many of the questions now supposed to be new. If these themes are old, then, it is not so much the fault of the editors or of teachers; but rather one of the inevitable circumstances of the situation. Very much of the work of life in all departments, consists in working over old ideas, in fighting over again old battles. Even our religious papers deal, after all, mainly with old themes—with the same old truths, and fight against the same old selfish human nature of other days. The business of a progressive journal would then seem to be to deal with these several themes with all possible freshness, originality and earnestness, and in those timely phases required by the situation and the hour. That we are thus seeking to meet and discuss the issues of the age, we may, as journalists, fairly claim. One little fact goes far to refute the sweeping assertion to the contrary, of the writer above quoted. Almost all the Acting Editors of our school journals are men of large experience in teaching, knowing thoroughly the actual wants of schools. Some of them are acknowledged leaders in the profession. No one stands higher in the whole country, in extent of official experience and responsibility—no one is more wide awake and progressive, than the editor of the *National Teacher* and *Ohio Educational Monthly*. The honored editor of the *Pennsylvania School Journal* is also one of the very foremost men as an educational writer,

and in official experience, of the largest kind, in practical school-work These two editors alone, have seen over and over again probably every possible phase of public school work. Is it likely that they, and through these their leaders, of course the whole mass of educators of the whole country, fail to see the live issues of the hour? Is it possible that they, with every chance, and every inducement to the contrary, are discussing old dead themes in old dead ways? Verily the idea hardly holds together long enough to be examined.

Now let us make one closing suggestion. The writer above quoted evidently knows of some grand themes, all bran new, all throbbing with vitality and vital to school-work, which have entirely escaped us editors—have escaped even our veteran State Superintendent Editors. We cannot seem to get hold of them. Year after year buried up to the neck as we are in the practical work of the school-room, we are baffled in discovering them. Be kind enough, friend, to hand the editors of this Journal simply a little list of these themes which you seem to have in mind; we will promise you, if they prove so vital, to put our sharpest pens into them at once, and brother editors, we won't be selfish—if there are enough of them to go around, we'll share!

ANNALS OF EDUCATION.

WOLCOTTVILLE.

This village is behind in regard to school houses, not having yet built a grand, central, brick building in which all the pupils may be accommodated. The number of different schools is six, occupying four buildings. The schools are graded, and well taught, but the fact that the teachers are in different parts of the village, with no common policy, prevents the highest degree of prosperity in the schools. This should not be so. Wolcottville has wealth enough to easily build a central school house with eight rooms and a hall, where all the pupils would be under one general management and supervision.

The High School, A. S. Lake, A. M., Principal, is the only public school north of Waterbury, on the Naugatuck Railroad, where pupils can fit for college, and, throughout the year, it has many in it from outside the district. The Grammar department is under the charge of Miss Emma C. Ives, a graduate of the State Normal School, class of 1870, who is proving herself a very accomplished teacher.

It seems very desirable that this growing place should speedily adopt the union district system, for which some are now earnestly longing.

PUTNAM.

It is to be hoped that this prosperous town may soon be able to effect the consolidation of its school districts that it may have, in the village, a union school, and a school building, worthy of its business enterprise. The grading of its schools, until recently, has been hardly more than in name, but last December, District No. 5 made some advance in the right direction. At that time this district appointed Mr. Lewis W. Thurber to to take charge of the four schools, and they are now prospering finely under his skillful management, teachers and pupils having awakened to a new interest, now that they have a competent and inspiring leader for all their schools. Miss Sarah E. Cryer is Mr. Thurber's assistant in the Grammar department, and as she seems to have an absorbing desire to be a "*live* teacher," she is doubtless one of the growing and efficient kind.

PLAINVILLE.

At a recent town meeting, Plainville voted to consolidate its school districts again, but this is reported to have been done by "less than-one third of the voters of the town," there being but 120 votes cast—72 "yes" to 48 "no." Had a motion to postpone action on this subject prevailed, and the question been decided, at a subsequent meeting, by ballot, the district system would doubtless have been retained. At this same meeting two localities for a new school house were voted on,—"the Osborn lot, on Broad street, receiving 87 yes, 57 no; the Adams lot, 78 yes, 68 no." A two-thirds vote not having been cast for either lot, the school officers of the town were directed "to call on the Board of Education of New Britain to locate the site." Plainville, with a well-built, ten-thousand-dollar school building,—such as some of the most intelligent citizens of the town have hoped to see adorning their beautiful village,—would be a far more attractive place of residence than it now is.

PLYMOUTH.

The watchful and laborious acting school visitor of this town has succeeded in interesting the teachers under his superintendence in a series of "teachers meetings," which are held once in two weeks. At these gatherings mutual improvement is sought "through the medium of essays, discussions, and interchange of thought and plans," and the success attending these meetings is most gratifying. Mr. Baldwin writes: "At our last meeting, seventeen of our twenty-one teachers were present, and our discussions and mutual criticisms were given and received in the most kindly and interesting manner. The subject of discipline,—the most perplexing with which the young teacher has to deal,—took up our time for one evening, and will probably be called u)

again. In regard to our teachers' meetings, I hope others may 'go and do likewise.'" This is good, and we wish that such meetings might become epidemic among our towns.

MASSACHUSETTS.

WESLEYAN ACADEMY, at Wilbraham, Mass., opens its winter course with 389 students, over one third of whom are pursuing classical studies. The Chinese and Japanese students are successful and popular.

The annual dinner of the Dartmouth alumni of Boston and vicinity, was held at the Revere House, Jan. 23d. The gentlemen were called to order by John P. Healy, President of the association, and immediately proceeded to the choice of officers with the following result: President, J. P. Healy; Secretary John F. Colby; Executive committee, the Hon Harvey Jewell, A. A. Ranney, J. C. Philbrick, L. O. Brigham, Mellen Chamberlain, A. B. Coffin, David H. Mason, Dr. William Read, and G. H. Tucker.

The sixty seventh semi-annual exhibition and examination of the State Normal school at Framingham was held January 23d. The attendance was large. In the morning the programme consisted of devotional exercises and examinations. The school assembled again in the hall in the afternoon, when several essays were read. The valedictory address was delivered by Miss Ella O. Dike, who in a brief and forcible address exhorted the members of the graduating class to be faithful to their work in the future. The parting hymn, composed by Miss Susan L. Hatch, was then sung, and was followed by addresses by several gentlemen present. Diplomas were presented to nineteen young ladies.

VIRGINIA.

THE report of W. H. Ruffner, superintendent of public instruction in Virginia, shows that in no state has greater progress recently been made in common school education than in Virginia. There are ninety-nine counties and six cities in Virginia entitled to school superintendents, and there are ninety-one of these officials, showing that there are but fifteen counties and cities in which the school system has not been organized. There are now 3,695 schools, 107 graded schools, and 3,863 teachers, employed at an average monthly salary of $29.81. The number of scholars in the public schools is 166,377; average daily attendance, 95,488. There are 450 houses owned by school districts, and the value of school property is $387,672. Of private schools Virginia has 648 primary, 187 high schools, and 21 colleges and technical schools. There are 10,182 scholars in the primaries, 7,742 in the high schools, 2 573 in the colleges and technical schools. Even more significant is the increase during the year of 648 schools, and 35,283 scholars in the public schools and 5,451 in the private schools. The increase in teachers is 769; in school-houses, 414. The change in public sentiment with regard to common school education is also said to be most marked, and to be observed in almost every part of the state. The people are beginning to appreciate the importance of a system of education for the whole people—white and colored. The state is aiding the Institute at Hampton, a colored normal school, and is about to establish an agricultural college at Blacksburg. The state received $28,000 from the Peabody fund last year for educational purposes.

BOOK NOTICES.

SWINTON'S PROGRESSIVE ENGLISH GRAMMAR. By Prof. Swinton. Published by Harper & Brothers.

This is a prominent member of the Harpers' Language Series. It is the second of the author's books on Grammar, the first being entitled "First Lessons in English;" the two being intended to furnish all that will be needed in the entire range of public schools from the lowest to the highest. They are so constructed, however, as to be used independently of each other, and the present volume embraces a complete course in itself. Prof. Swinton's name alone is sufficient to secure a large demand for this book. He is well known for his progressive and independent stand on grammatical subjects, and his "Word Book" has been welcomed wherever intelligent teachers are to be found in our land. This Grammar is thoroughly marked by all the freshness of Prof. Swinton's originality. The simplicity of its arrangement is highly to be commended. It treats simply of Etymology, Syntax, Analysis, and Construction—all that can be touched in any grammar. It sweeps away a heavy lot of mediæval rubbish, by its curt definitions and simple analyses. The issue of this book is one of the steps forward toward common sense and simplicity, which educators are slowly but surely taking. It would be rash for us here to attempt to decide upon the merits of the author's treatment of particular topics. The subject is inherently one of profound difficulty, and any one who ventures upon it must expect severe criticism. We do not wish to be understood as endorsing fully the author's treatment of his subject, but believe that his book will do good by helping many timid teachers who need the moral influence of a great name to cast aside the ponderous armor of mediæval grammar under which we are now sweltering.

PHYSICS AND POLITICS. By Walter Bagshot, Esq. Published by D. Appleton & Co., New York City.

This attractive book is given to the public as the second of the International Scientific Series, of which Tyndall on "Forms of Water" is the first. Its aim, which would not be divined from its title, is to make a thoughtful application of the Principles of Natural Selection and Inheritance to Political Society. It will thus

be recognized as one of those offshoots from Darwinism, which prove at least that it is a deeply rooted theory not to be dismissed by a fling.

We do not review this book in the interest of Darwinism, for while acknowledging the enrichment of science and philosophy by much that is true and wonderful in the developments of the great scientist, we are not assenters to the far-reaching conclusions of his theory. Yet from our not over favorable stand-point we are prepared to speak most highly of this new application of the theory. It is very instructive, and suggestive; it is written in a way to win readers; it is temperate in language and is so fertile in thought that it will set its readers a thinking, and if it does not convince them, it will make them modify some of their previous views. It is another very important contribution to the philosophy of history, or to sociology as it is now called. It aims to prove that civilization has not been the result of a steady progressive spirit in the very constitution of manhood, as distinguished from anything existing in brutes, and a spirit sure to work out civilization at last; but that it depends on certain conditions, physical or other, which conditions under the celebrated Darwinian theory have worked out these results. To seek some of these conditions and show their working, is the task assumed by the author. Taine has advanced a similar idea of the literature of a country, that it is not an accidental result of human genius and free will, but an unavoidable result of certain conditions; knowing the conditions, you might predict the literature; so in this instance, knowing the conditions, you may predict the growth of a nation. There is some admirable writing in this book; and back of it there is some deep thinking. We prize the book, and advise our teachers to add it to their libraries.

INDUSTRIAL DRAWING FOR BEGINNERS; FREE HAND. Published by James R. Osgood & Co., Boston.

Here we have another little manual of precisely the kind which we delight to honor. Following a plan marked throughout by sound practical sense, it takes the pupil through a most valuable set of exercises in free-hand drawing. It is specially designed for common school instruction; and to train the eye and hand, to strengthen the memory and judgment.

There is a continuous text throughout, explanatory of the accompanying illustrations, and leading the pupil successively into the four kinds of drawing called Linear, Orthographic Projection, Isometric Projection and Perspective; dealing however, for the best reasons, but slightly with the last topic. The instructions tend strongly toward the acquisition of skill in ornamental designs. The exercises are ingeniously devised and arranged, so as to be quite interesting, while they are following a strict plan of progressive instruction. Any teacher can derive much benefit and manual skill by following the course given in this book, and can then profitably use it with classes. This is scarcely more difficult than for a teacher, who is a bad penman, to improve himself by making diligent use of some good system of penmanship in improving his own hand and then instructing a class. That this is often done successfully, is well known; the same use can be made of this excellent little manual in drawing.

CULTURE AND RELIGION IN SOME OF THEIR RELATIONS. By J. C. Sharp, Principal of the United College of St. Salvator and St. Leonard, St. Andrews. New York: published by Hurd & Houghton, 1872. Price $1.25.

This book has attracted much attention among thinkers, and has called forth many warm encomiums. It deals with what one has styled "The Subject of the Day," and throughout the work the author treats his subject in a manner incisive, attractive and uplifting. The careful reading of these admirable lectures will tend to clarify the thinking and brace the soul for the noblest work of which it is capable. We are not surprised to learn from the preface to the third edition that "there are young men, here and there, who, needing help, have thought they found some in this small book."

A SMALLER SCHOOL HISTORY OF THE UNITED STATES, from the Discovery of America to the Year 1872. By David B. Scott. New York: Harper & Brothers, publishers, 1872.

We have found "Harper's School History of the United States" to work admirably in the class-room, and hence we feel safe in saying that, for younger pupils, this "smaller" and greatly improved history will satisfy all reasonable expectations. We like the plan and arrangement of matter, and hope that the book is bound as well as it is printed.

AMERICAN HAND-BOOK OF CHEMICAL AND PHYSICAL APPARATUS. E. B. Benjamin, New York City.

This is a very copious illustrated catalogue of apparatus and of chemicals, accompanied by a price list. The articles mentioned are generally numbered, for convenience of reference and many are clearly and conveniently illustrated. This book is elegantly got up, and from its completeness will be found exceedingly valuable to teachers desiring to order either large or small quantities of apparatus.

THE EARTH A GREAT MAGNET. By Alfred Marshall Mayer, Ph.D. Published by Charles C. Chatfield & Co., New Haven.

This pamphlet, forming No. IX of the "University Series," consists of a lecture delivered before the Yale Scientific Club, by the distinguished Professor of Physics in the Stevens Institute of Technology. It is a very full and lucid explanation of the magnetic influences of our Earth, and thoroughly interesting.

TWENTY-FIFTH SEMI-ANNUAL REPORT of the Superintendent of Public Schools of the City of Boston; September, 1872.

Through the kindness of Hon. John D. Philbrick, we have received this valuable report. It contains full

statistics of Boston schools, and some very suggestive thoughts from this very practical educator, reinforced by experience of the actual workings in the schools on the topics of Kindergarten, Sewing, Drawing, Attendance, and Hygiene.

TRANSACTIONS of the Wisconsin Academy of Science, Arts, and Letters, 1870-2.

This pamphlet, published by order of the Wisconsin Legislature, furnishes a series of valuable papers by eminent scientists in various departments of research. It is well worth reading for its own merits and to give us an idea of the wonderful activity in scientific research prevailing in the West.

PERIODICALS.

The Galaxy.—This magazine is now occupying one of the very first positions among our public journals. It is a great favorite with us, and we hear it every where praised. In every new number that reaches us we are sure to find not only something good, but a great deal that is good. Its papers afford us about the neatest specimen of hearty, honest amusement and of a varied popular instruction combined, of which we have any knowledge. Of serial stories it is now giving us "The Wetherel Affair," by J. W. DeForest, and "A Vagabond Heroine," by Mrs. Edwards; both exceedingly sprightly affairs. In the March number will be commenced a story entitled "The Antchar," by the great Russian novelist, Turgenef. The character sketches of various nations, by Mr. Albert Rhodes, already given, have been admirable; they are keen, spicy and withal important for their instructiveness. They are to be continued this year. In the February number now before us, we find the additional paper by General Custer, of "Life on the Plains," the timely article on "Life Assurance," "Casual Cogitations," by Carl Benson, "Women as Companions," by J. H. Browne, "The Life and Writings of Emily Bronte," and "Up to London for a Season," especially interesting. The Scientific Miscellany is an unusually well edited feature of this magazine.

Popular Science Monthly.—Mr. Youmans has fairly got the public ear in this new periodical. Young as it is, it is penetrating our households like a wedge, and our better halves are beginning in consequence to talk quite learnedly of Darwin's theories, of Sociology, of the laws of Heat, of Hygiene, and a host of other nice scientific things. The subjects introduced are in such variety that any one who is at all scientifically disposed, can be certain to find something to suit his tastes in every number. The miscellany also furnishes attractive little paragraphs for every reader. We can safely predict a great future for this enterprise; it will cultivate among the people the very taste by which it will be floated to success. To teachers we especially recommend this magazine as really necessary to their full development, unless they can afford to go in every case to the original sources of Scientific knowledge in its highest form. These pages will go far toward helping a teacher to keep up with the age.

The Phrenological Journal.—The February number brings us its usual amount of excellent reading. There are biographical notices of Rev. Norman McLeod, Daniel Fox, the farmer centenarian, Clara Louise Kellogg, and Dr. Harvey P. Peet, with portraits of each; a very full account of "Shad Culture;" an able historical paper entitled "The Man of Three Dreams," a psychography of the First Napoleon; and other articles of like value. *The Phrenological Journal*, though the leading organ of Phrenology, is by no means limited to the technical details of that subject, but is of general interest in the household as illustrating generally, and always ably, the various phases of human life.

SCHOOL JOURNALS.

We have space to notice but a few of our contemporaries for February.

The *American Educational Monthly* opens with a lengthy discussion of the question, "Shall our Girls Study the Classics?" followed by another discussion on the propriety of the expression, "Had Rather." This last is one of a series of able papers or kindred grammatical questions, published from time to time in this magazine. Copious geographical notes and items of educational intelligence occupy the remaining columns.

The *Rhode Island Schoolmaster* is mostly filled with reports of the twenty-eighth meeting of the Institute of Instruction, and of Normal School exercises.

The *Illinois Schoolmaster* is the name of a newly wedded pair, the former *Illinois Teacher* and the *Chicago Schoolmaster*. Combined as they are now under the joint editorship of Messrs. Gove and Hewett, we should have a strong journal. The *Illinois Teacher* alone was a fine journal. The articles in this number of more general interest are "Scraps from a Teacher's Brain," by O. S. Westcott; "What Can be Done with Science in Primary Schools," by J. Mahoney; and "Directions for Making and Packing Specimens of Natural History," by S. A. Forbes, the first of a series.

The *Quebec Journal of Education* gives us, among other valuable articles, "Thoughts on the Education of Girls," and "Hints on English Composition."

The leading article in the *Pennsylvania School Journal* is another installment of Mr. Gilbert Butler's series on "Technical Education."

No. II. of the *Chicago Teacher* has come to our hands. This journal keeps us company in adopting a large-sized page. It contains many scraps of good

advice to teachers, and among its longer papers we may mention particularly "The Text-Book Curse and Blessing," by J. M. Gregory, and "Rapid Combinations," by H. H. Belfield.

In the *National Teacher*, the article by W. H. Parcels on "Pronouncing the Syllables in Spelling," treats of a question which we consider an important one, and one on which we would like to hear further from practical teachers.

Other school journals we shall be unable to notice in this number.

The *National Normal* discusses Text Books on Grammar and Normal Management, and furnishes its usual copious news items.

The *Massachusetts Teacher* has two papers on English Grammar, and one on the Manufacture of Paper.

PERSONAL.

PRESENTATION.

The resignation by Miss Ella S. Smith of her position as teacher in the Normal School was mentioned in our report of the late graduating exercises. But the loss from the teacher's profession of one who has filled so admirably so important a position, deserves something more than the brief mention it has received. Miss Smith brought to her work all the prestige of a complete course at the Normal School at her native place, Westfield, Mass., and of very important experience and notable success in the management of primary schools, and as Principal of the Williamstown, Mass., High School. The noble results of her three and a half years' work in the institution have fully indicated the wisdom of her appointment. Her strong points have been the mastery of the art of object-teaching, and of the most animated and effective methods of class instruction in geography, a very just appreciation of the most judicious modes of discipline, and of the relative importance of different branches of study in the school-room. Keen in the discrimination of character, gifted rarely as a reader, and always commanding respect by her high general culture, she has ever imparted a probably unconscious inspiration to her teachings by the warm, loving heart, whose outgoings have simply been irrepressible among her pupils. The religious influence which she has exerted upon the school has also been very great. Those who have gone forth from the Normal School during the last few years, if possessed of any capacity whatever for teaching, cannot have failed to catch something of her vivacity in instruction, and of her power of using the most precisely defined methods in an elastic, spontaneous way, which make teaching at once a pleasure and a success.

We regret sincerely her withdrawal from the corps of State teachers, but we have the consolation of knowing that, if her life is spared, she is sure to adorn the responsible position of a pastor's wife, to which she is called. The high regard in which she was held by those under her instructions was well shown by the presenting to her by the pupils of the Normal School, on the late Graduation Day, of an elegant silver ice-pitcher, with goblets and salver. The following address by Mr. Thomas E. Hazell, accompanied the gift:

This is an occasion of school-life which, although in itself a source of joy, brings with it a shade of sadness. It is a season in which teachers and schoolmates are more warmly drawn toward each other by the all-pervading thought that some of their number are about to bid adieu to the old school home. With us, as a school, these seasons have thus far witnessed the departure of many pupils, while the circle of instructors has remained unbroken. For years the chain has been most firmly united, but we regard that one of its bright links is about to be removed from its place, and that to-night we must bid our loved and respected teacher farewell.

Dear teacher, it is with the greatest reluctance that we part from you. At the same time, we are thankful that it has been our privilege to enjoy a profit by your instruction and example in the past. You have been to us a most efficient and faithful instructor; a friend, ever ready to advise, ever striving by precept and example to lead us to acquire such habits of thought and action as will be to us like good seed, planted by your hand, and which we trust, being nurtured by the blessing of Heaven, will spring up and grow with our years. The love and earnestness which have characterized your labors with us, have awakened a responsive echo which prompts us to give outward expression to the emotions excited within.

Allow me, in behalf of the school, to present you with this token of our esteem. Please accept it, not on account of its intrinsic value, but as a memento of past scenes, and an expression of our appreciation of your valuable services. With it we tender our heartfelt wishes for your success in the new sphere of life which you are about to enter. May the smile of Heaven attend you. A kind Providence shower blessing upon your pathway through life, and a crown with many stars be yours in the day when "He maketh up His jewels."

PUBLISHERS' NOTES.

We can endorse the following from the New York *Tribune:*

THE WATERS CONCERTO PARLOR ORGANS.—Mr. Horace Waters, of No. 481 Broadway, has a patented improvement in parlor organs which renders his popular instruments in some respects preferable to any that we have seen. The new feature consists of what is called a Concerto Stop, produced by an extra set of reeds peculiarly voiced. Its tone is remarkably full, sweet, and brilliant, and its power very fine, while it has more of the harshness and inflexibility common to the forte stops of the ordinary reed organ. With this stop and the swell the most charming varieties of expression can be produced. The organ in other respects has also some conspicuous merits. The largest of the several sizes embraces ten stops, namely, a rich sub-bass, a very delicate picolo, a flute, melodia, dulciana, forte, viola, coupler, the concerto, and a vox humana or tremolo. They have three full sets of reeds, with a clear, delicate tone, an excellent action, and an easy bellows attachment, besides being handsome in appearance.

CONTENTS OF VOL. III, No 3.

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[II Itl]

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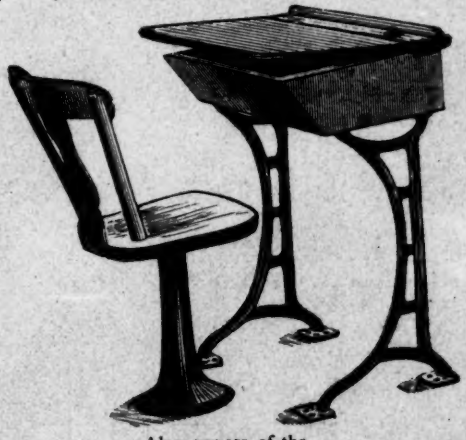

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From R. B. CLARK, Esq.,
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